MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

VOL. XLII. FEBRUARY 10, 1882. No. 4.

J. R. HIND, Esq., F.R.S., President, in the Chair.

Herbert J. Bell, Esq., Royal Alfred Observatory, Mauritius;
Adam Hilger, Esq., 192 Tottenham Court Road, W.; and
The Rev. Henry George Bonavia Hunt, Trinity College, Mandeville Place, W.;

were balloted for, and duly elected Fellows of the Society.

REPORT OF THE COUNCIL TO THE SIXTY-SECOND ANNUAL GENERAL MEETING OF THE SOCIETY.

The following table shows the progress and present state of the Society:—

	Compounders	Annual Subscribers	Non-resident	Mathematical Society	Total Fellows	Associates	Patron	Grand Total
December 31, 1880 ...	220	363	3	5	591	41	1	633
Since elected	+3	+19	...	...	...	+5	...	...
Deceased	−4	−6	...	...	...	−3	...	...
Removals	+3	−3	...	...	...	...	...	...
Resigned	...	−8	...	...	...	...	...	...
Expelled	...	−1	...	...	...	...	...	...
December 31, 1881 ...	222	364	3	5	594	43	1	638

Mr. Barrow's Account as Treasurer of the Royal

RECEIPTS.

	£	s.	d.	£	s.	d.
Balance at Bankers, Jan. 1, 1881	317	14	10			
„ in hand of Assistant Secretary on account of Turnor Fund	12	5	6			
				330	0	4
Dividend on £7,500 Consols	109	4	5			
„ £5,700 New 3 per cent. Stock ...	83	7	3			
„ £7,500 Consols	110	3	2			
„ £5,700 New 3 per cent. Stock ...	83	14	5			
				386	9	3
Received on account of Subscriptions:						
Arrears	154	7	0			
257 Contributions for 1881	539	14	0			
5 Contributions for 1882	10	10	0			
24 Admission Fees	50	8	0			
21 First Contributions	30	9	0			
				785	8	0
6 Composition Fees				126	0	0
Sales of Publications:						
At Society's Rooms, 1881	56	15	11			
At Williams & Norgate's, 1880	76	8	5			
				133	4	4
				£1,761	1	11

Astronomical Society, from Dec. 31, 1880, to Dec. 31, 1881.

EXPENDITURE.

	£	s.	d.	£	s.	d.
Salaries:						
Editor of *Monthly Notices*	60	0	0			
Assistant Secretary	225	0	0			
				285	0	0
Income Tax and House Duty				10	10	0
Fire Insurance				7	16	6
Printing: Spottiswoode & Co.	504	13	6			
„ H. Richardson...	1	6	8			
				506	0	2
Lithography and Engraving				25	0	3
Turnor Fund: Purchase of Books for Library ...				33	6	1
Binding Books in Library				43	0	3
Lee Fund: Mrs. Harris				10	0	0
House Expenses	37	11	0			
Wages	17	14	0			
Stamps and postage	54	14	0			
Carriage of books and parcels	3	6	6			
Stationery and office expenses	4	0	4			
Expenses of meetings	22	10	0			
Coals and gas	40	18	8			
Fittings, repairs, &c.	12	16	10			
Sundries	5	10	4			
				199	1	8
Mrs. Jackson-Gwilt's annuity				8	19	0
Cheque book, and deductions on cheques ...					11	0
Due to Assistant Secretary on Petty Cash account Jan. 1, 1881				5	4	0
Balance at Bankers', credited in pass book, Dec. 31, 1881	601	5	1			
Country Cheque not credited	2	2	0			
Balance in hand of Assistant Secretary on account of Turnor Fund	13	2	9			
on Petty Cash account	10	3	2			
				626	13	0
				£1,761	1	11

Examined and found correct, Jan. 10, 1882.

ROBT. J. LECKY,
J. RAND CAPRON.

Assets and present property of the Society, January 1, 1882 :—

	£	s.	d.	£	s.	d.
Balance at Bankers', Dec. 31, 1880, as credited in pass book	601	5	1			
Country Cheque not credited	2	2	0			
Balance in hand of Assistant Secretary on account of Turnor Fund	13	2	9			
„ on Petty Cash account	10	3	2			
				626	13	0
Due on account of subscriptions :						
5 Contributions of 4 years' standing ...	42	0	0			
10 „ 3 „ ...	63	0	0			
28 „ 2 „ ...	117	12	0			
64 „ 1 „ ...	134	8	0			
Various amounts	12	12	0			
	369	12	0			
Less 5 Contributions paid in advance ...	10	10	0			
				359	2	0
Due for Publications from Messrs. Williams & Norgate (for sales during 1881)				48	10	4

£7,500 Consols, including the Lee Fund (£300), the Turnor Fund (£450), and the Horrox Memorial Fund (£100).

£5,700 New 3 per cent. Stock, including Mrs. Jackson-Gwilt's gift (£300).

Astronomical and other MSS., Books, Prints, Instruments, &c.

Unsold Publications of the Society.

Four Gold Medals.

Report of the Auditors.

We, being two of the duly appointed Auditors, beg to lay before this General Meeting of the Royal Astronomical Society the following Report:—

1. We have examined the Treasurer's account, and an account of the assets and property of the Society, and have found and certified the same to be correct.

2. The receipts and expenditure for the past year are as stated in the Treasurer's account.

3. The cash in hand on December 31, 1881, including the balance at the bankers', amounted to 626*l.* 13*s.*

4. The funded property of the Society is the same as at the end of last year, and is in a satisfactory state, and the books,

instruments, and other effects have been examined and found in a satisfactory condition, so far as their safe keeping is concerned.

5. We have laid on the table a list of the names of those Fellows who are now in arrear for sums due at the last Annual General Meeting, with the amount due against each Fellow's name.

ROBT. J. LECKY,
J. RAND CAPRON.

Stock in hand of volumes of the *Monthly Notices*:—

Vol.	At Society's Rooms	At Williams & Norgate's	Vol.	At Society's Rooms	At Williams & Norgate's
I.	77	1	XXIII.	31	...
II.	77	2	XXIV.	24	...
III.	...	...	XXV.	7	...
IV.	...	...	XXVI.	10	...
V.	...	...	XXVII.	3	...
VI.	44	1	XXVIII.	75	1
VII.	2	...	XXIX.	55	2
VIII.	141	2	XXX.	68	4
IX.	24	3	XXXI.	99	2
X.	177	1	XXXII.	122	...
XI.	186	1	XXXIII.	106	...
XII.	12	2	XXXIV.	83	2
XIII.	152	3	XXXV.	66	3
XIV.	110	3	XXXVI.	39	...
XV.	127	2	XXXVII.	41	4
XVI.	110	3	XXXVIII.	105	3
XVII.	137	1	XXXIX.	108	3
XVIII.	167	...	XL.	122	3
XIX.	60	...	XLI.	125	5
XX.	31	...	Index to *Monthly Notices*	594	...
XXI.	19	...			
XXII.	34	...			

In addition to the above volumes of the *Monthly Notices*, the Society has a considerable stock of separate numbers of nearly all the volumes. With the exception, however, of Vols. XXXVI. to XLI. no complete volumes can be formed from the separate numbers in stock.

Stock in hand of volumes of the *Memoirs* :—

Vol.	At Society's Rooms	At Williams & Norgate's	Vol.	At Society's Rooms	At Williams & Norgate's
I. Part 1	6	...	XXIV.	163	...
I. Part 2	42	...	XXV.	175	...
II. Part 1	56	...	XXVI.	179	1
II. Part 2	22	...	XXVII.	432	...
III. Part 1	71	...	XXVIII.	392	...
III. Part 2	90	...	XXIX.	418	...
IV. Part 1	83	3	XXX.	169	...
IV. Part 2	91	3	XXXI.	149	2
V.	109	4	XXXII.	166	2
VI.	128	3	XXXIII.	172	1
VII.	153	3	XXXIV.	171	8
VIII.	132	3	XXXV.	112	7
IX.	139	3	XXXVI. (with M.N.)	206	12
X.	151	...	XXXVI. (without)	4	...
XI.	159	...	XXXVII. Part 1	353	9
XII.	166	...	XXXVII. Part 2	301	8
XIII.	173	...	XXXVIII.	292	2
XIV.	376	3	XXXIX. Part 1	264	4
XV.	145	1	XXXIX. Part 2	270	5
XVI.	172	...	XL.	297	2
XVII.	153	2	XLI.	468	3
XVIII.	155	1	XLII.	263	3
XIX.	158	1	XLIII.	277	2
XX.	160	2	XLIV.	275	4
XXI. Part 1	314	...	XLV.	365	2
XXI. Part 2	99	...	XLVI.	738	...
XXI. 1 & 2 (together)	66	1	Index to *Memoirs*	659	2
XXII.	160	1			
XXIII.	155	1			

Instruments belonging to the Society.

No. 1. The *Harrison* clock.
„ 2. The *Owen* portable circles, by Jones.
„ 3. The *Beaufoy* circle.
„ 4. The *Beaufoy* transit instrument.
„ 5. The *Herschel* 7-foot telescope.

No. 6. The *Greig* universal instrument, by Reichenbach and Ertel. The transit telescope, by Ultzschneider and Fraunhofer, of Munich.
„ 7. The *Smeaton* equatoreal.
„ 8. The *Cavendish* apparatus.
„ 9. The 7-foot Gregorian telescope (late Mr. Shearman's).
„ 10. The variation transit instrument (late Mr. Shearman's).
„ 11. The universal quadrat, by Abraham Sharp.
„ 12. The *Fuller* theodolite.
„ 13. The standard scale, by Troughton and Simms.
„ 14. The *Beaufoy* clock, No. 1.
„ 15. The *Beaufoy* clock, No. 2.
„ 16. The *Wollaston* telescope.
„ 17. The *Lee* circle.
„ 18. The *Sharpe* reflecting circle.
„ 19. The *Brisbane* circle.
„ 20. The *Baker* universal equatoreal.
„ 21. The *Reade* transit.
„ 22. The *Matthew* equatoreal, by Cooke.
„ 23. The *Matthew* transit instrument.
„ 24. The *South* transit instrument.
„ 25. A sextant, by Bird (formerly belonging to Captain Cook).
„ 26. A globe showing the precession of the equinoxes.
The *Sheepshanks* collection :—
„ 27. (1) 30-inch transit instrument, by Simms, with level and two iron stands.
„ 28. (2) 6-inch transit theodolite, with circles divided on silver; reading microscopes, both for altitude and azimuth; cross and siding levels; magnetic needle; plumbline; portable clamping foot and tripod stand.
„ 29. (3) $4\frac{6}{10}$-inch achromatic telescope, about 5 feet 6 inches focal length; finder; rack motion; double-image micrometer; two other micrometers; object-glass micrometer; one terrestrial and ten astronomical eyepieces, applied by means of two adapters; equatoreal stand, and clock movement.
„ 30. (4) $3\frac{1}{4}$-inch achromatic telescope, with equatoreal stand; double-image micrometer; one terrestrial and three astronomical eyepieces.
„ 31. (5) $2\frac{3}{4}$-inch achromatic telescope, with stand; one terrestrial and three astronomical eyepieces.
„ 33. (7) 2-foot navy telescope.
„ 34. (8) Transit instrument of 45 inches focal length; with iron stand, and also Ys for fixing to stone piers; two axis levels.
„ 35. (9) Repeating theodolite, by Ertel, with folding tripod stand.

No. 36. (10) 8-inch pillar sextant, by Troughton, divided on platinum, with counterpoise stand and artificial horizon.

„ 37. (11) Portable zenith telescope and stand, $2\frac{3}{4}$-inch aperture and 26 inches focal length; 10-inch horizontal circle and 8-inch verticle circle, read to 10″ by two verniers to each circle.

„ 38. (12) 18-inch Borda repeating circle, by Troughton, $2\frac{1}{8}$-inch aperture and 24 inches focal length; the circles divided on silver, the horizontal circle being read by four verniers, and the vertical circle by three verniers, each to 10″.

„ 39. (13) 8-inch vertical repeating circle, with diagonal telescope, by Troughton and Simms; circle divided on silver, reading to 10″; a 5-inch circle at eye-end reading to single minutes; horizontal circle 9 inches diameter in brass, reading to single minutes.

„ 40. (14) A set of surveying instruments, consisting of a 12-inch theodolite for horizontal angles only, reading to 10″; two sets of adjusting plates; tripod stand with enclosed telescope; heavy stand for theodolite; Y piece of level; two large and three small ground-glass bubbles divided; level collimator, object-glass $1\frac{5}{8}$-inch diameter and 16 inches focal length; micrometer eyepiece, comb, and wires; mercury bottle and trough.

„ 41. (15) Level collimator with object-glass $1\frac{7}{8}$-inch diameter and 16 inches focal length; stand, rider-level, and fittings.

„ 42. (16) 10-inch reflecting circle, by Troughton, reading by three verniers to 20″; counterpoise stand; artificial horizon with mercury; two tripod stands.

„ 43. (17) Hassler's reflecting circle, by Troughton, with counterpoise stand.

„ 44. (18) 6-inch reflecting and repeating circle, by Troughton and Simms, contained in three boxes, two of which form stands. Circle divided on silver, reading to single minutes; two inside arcs divided to single degrees, 150 degrees on each side; artificial horizon and mercury.

„ 45. (19) 5-inch reflecting and repeating circle, by Lenoir, of Paris.

„ 46. (20) Reflecting circle by Jecker, of Paris, 11 inches in diameter, with one vernier reading to 15″.

„ 47. (21) Box sextant; reflecting plane and level.

„ 48. (22) Prismatic compass, by Troughton and Simms.

„ 49. (23) Mountain barometer.

„ 50. (24) Prismatic compass, by Thomas Jones, mounted with a cylindrical lens.

„ 51. (25) Ordinary $4\frac{1}{2}$-inch compass with needle.

No. 52. (26) Dipping needle, by Robinson.
„ 53. (27) Compass needle, mounted for variation.
„ 54. (28) Magnetic intensity needle, by Meyerstein, of Göttingen; a strongly fitted brass box with heavy magnet; filar suspension.
„ 55. (29) Box of magnetic apparatus.
„ 56. (30) Hassler's reflecting circle, by Troughton; a 10½-inch reflecting and repeating circle, with stand and counterpoise, divided on platinum with two movable and two fixed indices; four verniers reading to 10″.
„ 57. (31) Box sextant and glass plane artificial horizon, by Troughton and Simms.
„ 58. (32) Plane 2⅜-inch speculum, artificial horizon, and stand.
„ 59. (33) 2½-inch circular level horizon, by Dollond.
„ 60. (34) Artificial horizon, roof, and trough; the trough 8¼ by 4½ inches: tripod stand.
„ 61. (35) Set of drawing instruments, consisting of 6-inch circular protractor and common protractor, T-square: one beam compass.
„ 62. (36) A pentagraph.
„ 63. (37) A noddy.
„ 64. (38) A small Galilean telescope with object-glass of rock crystal.
„ 65. (39) Five levels.
„ 66. (40) 18-inch celestial globe.
„ 67. (41) Varley stand for telescope.
„ 69. (43) Telescope, with the object-glass of rock crystal.
„ 70. Portable equatoreal stand.
„ 71. Portable altazimuth tripod.
„ 72. Four polarimeters.
„ 74. Registering spectroscope, with one large prism.
„ 76. Two five-prism direct-vision spectroscopes.
„ 78. 9¼-inch silvered-glass reflector and stand, by Browning.
„ 79. Spectroscope.
„ 80. A small box, containing three square-headed Nicol's prisms; two Babinet's compensators; two double-image prisms; three Savarts; one positive eyepiece, with Nicol's prism; one dark wedge.
„ 81. A back-staff, or Davis' quadrant.
„ 82. A nocturnal or star dial.
„ 83. An early non-achromatic telescope, of about 3 feet focal length, in oak tube, by Samuel Scatliffe, London.
„ 84. A Hollis observing chair.
„ 85. Double image micrometer, by Troughton and Simms.
„ 86. 4½-inch Gregorian reflecting telescope, by Short,

with altazimuth stand and 6-inch altitude and azimuth circles and two eyepieces.

No. 87. $3\frac{1}{4}$-inch Gregorian reflecting telescope with wooden tripod stand.

„ 88. Pendulum with 5-foot brass suspension rod, working on knife edges, by Thomas Jones.

„ 89. A Rhabdological Abacus. A contrivance invented by Mr. H. Goodwyn, consisting of a box filled with compartments, in which are square rods covered with numbers, which can be arranged so as to facilitate the labour of multiplying high numbers.

„ 90. An Arabic celestial globe of bronze, not quite 6 inches in diameter.

„ 91. Astronomical time watchcase, by Professor Chevallier.

„ 92. 2-foot protractor, with two moveable arms, and vernier.

„ 93. Beam compass, in box.

„ 94. 2-foot navigation scale.

„ 95. Stand for testing measures of length.

„ 96. Artificial planet and star, for testing the measurement of a fixed distance at different position-angles.

„ 97. 12-cell Leclanché battery.

„ 98. 2 feet 6 inch navy telescope with object-glass $2\frac{1}{2}$ inches, by Cooke, with portable wooden tripod stand.

„ 99. 12-inch transit instrument, by Fayrer & Son, with level and portable stand.

„ 100. 9-inch transit instrument, with level and iron stand.

„ 101. Small equatoreal sight instrument, by G. Adams, London.

„ 102. Sun-dial, by Troughton.

„ 103. Sun-dial, by Casella.

„ 104. Sun-dial.

„ 105. Box sextant, by Troughton and Simms.

„ 106. Prismatic compass, by Schmalcalder, London.

„ 107. Compass, by C. Earle, Melbourne.

„ 108. Prismatic compass, by Negretti and Zambra.

„ 109. Dipleidoscope, by E. Dent.

„ 110. Abney level, by Elliott.

„ 111. Pocket spectroscope, by Browning.

„ 112. Small brass astrolabe.

„ 113. Double sextant, by Jones.

„ 114. Two models, illustrating the effects of circular motions.

„ 115. A cometarium.

„ 116. A pair of 18-inch globes.

The following instruments are lent, during the pleasure of the Council, to the undermentioned persons :—

No. 4. The *Beaufoy* transit instrument, to the Observatory, Kingston, Canada.
„ 12. The *Fuller* theodolite, to the Director of the Sydney Observatory.
„ 22. The *Matthew* equatoreal, to Mr. Brett.
„ 23. The *Matthew* transit, to Captain Noble.
„ 74. Registering spectroscope, with prism, to Mr. Lecky.
„ 78. The $9\frac{1}{4}$-inch reflector, to Mr. Neison.

From the *Sheepshanks* collection :—

No. 30. (4) $3\frac{1}{4}$-inch equatoreal and stand, to Mr. Sadler.
„ 34. (8) Transit instrument, to the Rev. Professor Pritchard.
„ 35. (9) Repeating theodolite, to the Sydney Observatory.
„ 69. (43) Telescope, with rock-crystal object-glass, to Dr. Huggins.

During the past year the instruments which are at present in the Society's rooms have been examined by a Committee appointed by the Council. The Committee have compared the instruments with the printed list, and have reported them to be in a satisfactory condition.

The Library.

The cataloguing of the books in the library has been steadily continued, and it is expected that the work will be completed in the course of the present year.

The Gold Medal.

The Council have awarded the Society's Gold Medal to Mr. David Gill, for his Heliometer Observations of *Mars* at Ascension, and for his discussion of the results. The President will lay before the Society the grounds upon which this award has been founded.

Publications of the Society.

Vol. XLVI. of the *Memoirs* has been published during the past year. It contains the following papers :—

David Gill. Account of a determination of the solar parallax from observations of *Mars*, made at Ascension in 1877.

A. A. Common. Particulars of the mounting of a 3-foot reflector.

George M. Seabroke. Third catalogue of micrometrical

measures of double stars made at the Temple Observatory, Rugby.

A. C. Ranyard. Observations of the total solar eclipse of 1878, July 29, made at Cherry Creek Camp, near Denver, Colorado.

Obituary.

The Council regret that they have to record the loss by death of the following Fellows and Associates during the past year:—

Fellows:—G. S. Almond.
Célestin Baume.
W. R. Birt.
J. A. Cockburn.
Samuel Courtauld.
Rev. J. M. Heath.
Rev. W. H. Hennah.
Thomas Hopkirk.
H. W. Jeans.
C. H. Pinches.
Richard Webster.

Associates:—Carl Bruhns.
Alfred Gautier.

Pierre Joseph Célestin Baume was born in 1819 and was one of the founders of the well-known house of Baume Brothers, at Les Bois, Switzerland. The business of the house was the manufacture of a superior class of Geneva watches, and, having made continued improvements, Mr. Baume conceived the idea of submitting his watches to the judgment of the English firms, and in 1846 came to England for this purpose. He was one of the first to introduce Geneva watches into this country. His success exceeded his utmost expectations, and a business was immediately established in London, which is still carried on.

He was connected with various philanthropic and other societies, and in 1861 was elected a member of the Society of Arts. He was one who helped to found the French Hospital for foreigners in London, which was opened in 1867, and with which he was intimately connected until the day of his death.

He died suddenly at his residence in London on September 27, 1880. He was elected a Fellow of the Society on May 8, 1863.

William Radcliff Birt was born on July 15, 1804. His first writings were astronomical, some observations upon the period of the variable star β *Lyræ* having been communicated by him to this Society so long ago as 1830, and published in the